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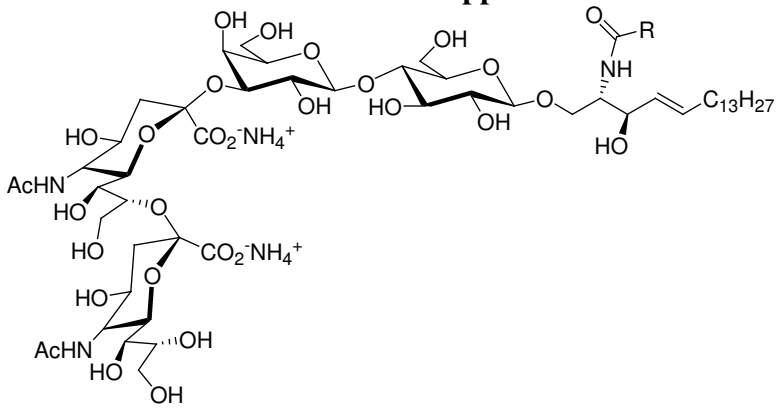
PRODUCT DATA SHEET

Disialoganglioside GD_3 (NH_4^+ salt)

Catalog number: 1504
Synonyms:
Source: Natural, bovine buttermilk
Solubility: Chloroform/ Methanol (2:1)
Forms micellar solution in water
CAS NO: 62010-37-1

Molecular Formula: $C_{75}H_{125}N_3O_{29}\cdot 2NH_3$
Molecular Weight: $1543+2NH_3$
(tricosanoyl, NH_4^+ salt)
Storage: -20°C
Purity: TLC: >98%
TLC System: Chloroform/ Methanol/ 2.5N Ammonium hydroxide (60:40:9 by Vol.)
Appearance: Solid



Application notes:

Gangliosides[1] are acidic glycosphingolipids that form lipid rafts in the outer leaflet of the cell plasma membrane, especially in neuronal cells in the central nervous system.[2] They participate in cellular proliferation, differentiation, adhesion, signal transduction, cell-to-cell interactions, tumorigenesis, and metastasis. The accumulation of gangliosides has been linked to several diseases including Tay-Sachs and Sandhoff disease. GD3 is predominantly expressed during neuronal development and its expression becomes very limited in adult tissues. GD3 expression is unusually high in basal cell carcinomas and malignant melanomas and is thought to be a human melanoma-specific antigen. Although GD3 is not immunogenic it has been investigated as a tool for immunotargeting human melanoma cells.[3] Over expression of GD3 has led to apoptosis by recruiting mitochondria to apoptotic pathways and suppressing NF-κB activation and subsequent κB-dependent gene induction.[4] Increased levels of GD3 have also been found to be associated with proliferative diseases, such as atherosclerosis.

Selected References:

1. L. Svennerholm, et al. (eds.), *Structure and Function of Gangliosides,* New York, Plenum, *1980*
2. T. Kolter, R. Proia, K. Sandhoff "Combinatorial Ganglioside Biosynthesis" *J. Biol. Chem*., Vol. 277:29 pp. 25859-25862, *2002*
3. H. Jennings et al. "Bioengineering of Surface GD3 Ganglioside for Immunotargeting Human Melanoma Cells" *Journal of Biological Chemistry,* Vol. 279:24 pp. 25390, *2004*
4. J. Fernández-Checa et al. "Ganglioside GD3 Sensitizes Human Hepatoma Cells to Cancer Therapy" *Journal of Biological Chemistry*, Vol. 277:51 pp. 49870, *2002*

All chemicals listed are for investigational research purposes only. They are not intended for human consumption or to be used in food or food additives. None are for general drug or medicinal use on humans. We believe that the information, offered in good faith, is accurate.